Memorandum of Agreement

between

NASA Integrated Services Network

and

Marshall Space Flight Center (MSFC)

for

NISN Host Center Support

January 2006

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1. Introduction

1.1 Purpose

The purpose of this Memorandum of Agreement (MOA) is to document agreements between the National Aeronautics and Space Administration (NASA) Integrated Services Network (NISN) and the Marshall Space Flight Center (MSFC) relating to NISN provided Wide Area Network and Telecommunications support at that Center.

1.2 Scope

NISN provides Wide Area data networking and telecommunication services to NASA Centers/programs/projects, operating locations, approved and sponsored contractor locations, international space agency partners, and affiliated universities. In providing these services, NISN relies on Host Center(s) to provide support for real property, facilities, and services (i.e., utilities, and security). The MOA defines the services provided by NISN to MSFC and by MSFC to NISN as of the date of the MOA and codifies in one document the existing understandings between NISN and MSFC regarding this mutual support.

1.3 Reviews and Changes

This agreement shall be reviewed annually or as required for updates or changes. Changes shall be made only with the mutual consent of NISN's Project Office and MSFC. If either party wishes to discontinue or modify this agreement, at least 90 days' notice will be given to the other party via written notification.

2. Applicable Documents and any subsequent versions

a. NISN-3000-4200, Rev 7, 20 Apr 2005, NISN Services Document (NSD)

> **Note:** The current version of the NISN Services Document is available in the document repository located on the Internet's World Wide Web service at http://www.nisn.nasa.gov.

b. NISN-SOP-0002, NASA Integrated Services Network (NISN) Standard Operating Procedure for Trouble Reporting, Activity Scheduling, Mission Freeze, Major Outage Notifications and Operating Level Agreements (OLA).

c. Project Service Level Agreements, negotiated annually

d. NISN 3000-4527 DRAFT, NISN Service Request (NSR) Process

e. Host Center Agreements for Mission Services

f. NPR 1600. Change1, 8 Nov 2005, NASA Security Program Procedural Requirements

g. NPD 1600.2D, 1 Feb 2006, NASA Security Policy

h. NPR 1620.3, 12 Aug 2004, Physical Security Requirements for NASA Facilities and Property

i. NPR 2800.1, Change 1, 17 Sep 2004, Managing Information Technology

j. NPD 2800.1A, 18 Aug 2004, Managing Information Technology

k. NPR 2570.1, 24 Apr 2003, NASA Radio Frequency (RF) Spectrum Management Manual

l. NPD 2570.5D, 17 Oct 2005, NASA Radio Frequency Spectrum Management

m. NPR 2810.1, 26 Aug 99, Security of Information Technology, Revalidated 8/12/04

n. NPD 2810.1C, 7 Apr 2004, NASA Information Security Policy

o. NITR 2810-1, 15 Sep 2003, Wireless Requirements

p. NITR 2810-2, 28 Jun 2004, Information Technology (IT) System Security Requirements

q. NITR 2810-3, 28 Jun 2004, NASA Internet Publishing Content Guidelines

3.   Services

NISN shall provide Wide Area Network (WAN) telecommunications services in support of NASA operating locations, mission directorates, programs, and projects. NISN maintains a web page at http://www.nisn.nasa.gov that provides information on available NISN services as well as NISN contacts and other useful data.

4.   Personnel

a. NISN shall:

1.   Provide Civil Servant NISN Customer Interface Group (CIG) leads for each Center, Project and Mission Directorate.

2.   Provide contractor personnel to support the CIG and serve as NISN Customer Service Representatives (CSR) to their respective NASA Centers / Facilities. These personnel are available to facilitate the requirements development and planning process.

3.   Provide on-site contractor personnel support to the NISN WAN Gateways at NASA Centers / Facilities. These personnel are responsible for installation, operations, and maintenance of NISN provided equipment and circuits.

4.   Provide Requirements Planning, Engineering, Acquisition, Implementation, Installation, Operations, and Configuration Management personnel to actively work with each host organization to develop, implement, and operate data

networking and telecommunication solutions to efficiently meet its specific requirements.

b. Center shall:

1. Appoint a primary and alternative Civil Servant to function as its Center Representative for matters involving NISN (the "NISN Center Representative"). In general terms, a NISN Center Representative should be a senior person who is able to commit the organization in areas such as the communications networks budget, requirements for service, and policy. The functions of a NISN Center/Program Representatives are as follows:

    (a) Gathering and verifying network requirements

    (b) Coordinating requirements with NISN Customer Interface Group (CIG)

    (c) Initiating requests for studies or cost estimates to the NISN organization

    (d) Receiving and facilitating the distribution of NISN information

    (e) Participating in center/program requirements reviews

    (f) Interfacing with the NISN Team

    (g) Coordinating local installation activities in support of NISN services

    (h) Facilitating facility modifications as required

    (i) Representing Center/Program at NISN Customer Forums

    (j) Facilitating validation of NISN billing information for services

    (k) Coordinating funding issues

    (l) Identifying issues and areas of concern

    (m) Providing contract evaluation input

    (n) Ensuring requirements provided to NISN and services provided to their center customers are consistent with Agency and Center policy

    (o) In addition, this person will require direct access to the local center CIO organization as well as other local organizations such as Facilities, Transportation, Chief Financial Officer, Program/project funding contacts, etc., at their respective centers/contractor site.

2. Provide on-site and/or on-call personnel to actively work with NISN personnel to develop, implement, and operate data networking and telecommunication solutions required by the center or one of its tenants.

5. Access and Badging

NISN requires access to Centers and facilities to support NISN services for its NISN employees, contractors, and vendors, 365 days a year, 24 hours a day.

a. NISN shall:

1. Require NISN personnel or personnel conducting NISN business to provide information to each Center as required to gain access to the Center.

2. Require NISN personnel or personnel conducting NISN business to attend all training required to gain access to Center facilities.

3. When available, NISN employees, contractors, and vendors with Center badges and/or Personnel Reliability Program (PRP) authorization will escort and monitor any NISN employees, contractors, and vendors that do not have Center badges and/or PRP or may be awaiting PRP authorization.

b. Center shall:

1. Provide NISN employees, contractors, and vendors access to areas required to support NISN services at their respective locations.

2. Provide requirements and procedures necessary for gaining access to site/facility so that NISN may distribute the information to NISN employees or vendors requiring access.

3. Ensure NISN employees are included on list of employees allowed immediate access to the site/facilities immediately after a disaster.

4. Provide any specialized access training required for access to site or facilities.

5. Provide Personnel Reliability Program (PRP) paperwork and authorization for NISN employees, contractors, and vendors at each location that utilizes NISN services, consistent with center policy.

6. Provide points of contact that will be available to escort non-badged NISN personnel, contractors, or vendors into Center facilities or into areas requiring special badges (i.e., PRP), in the event that badged NISN personnel are not available, to allow NISN to maintain and operate its services at each Center.

6.   Facilities

NISN use of Center real property and facilities is for the mutual benefit of MSFC and NISN for the delivery of data and telecommunications services required by the Center. These facilities and real property may be used by NISN for the installation of telecommunications equipment, personnel offices, and storage. Use of this real property and facilities by NISN includes use (1) by contractor personnel supporting NISN's customer service, operations and maintenance activities and (2) for the installation of equipment and services contracted for by NISN in response to MSFC requirements.

a. NISN shall:

1. Coordinate with and obtain approval of the designated NISN Center Representative before requesting modifications to the NISN-occupied real property, facilities, and supporting utilities from the appropriate host organization.

2. Follow standard NASA policies that govern the use of real property on a center or contractor site. It is the responsibility of NASA contractors to manage its sub-contractors and vendors, and to provide accurate and timely documentation to the authorized NASA center and/or contractor liaison for real property.

b. Center shall:

1. Provide NISN the use of the real property and facilities described below for the WAN Gateway:

(a)	Gateway: Bldg 4207/145A	2,380 sq. ft.
(b)	Gateway Tech Area: Bldg 4207/111	508 sq. ft.
(c)	Customer Premise Equip. POP: Bldg 4207/110C	360 sq. ft.
(d)	NASCOM POP Area: Bldg 4207/107	760 sq. ft.
(e)	Enterprise Network Mgmt. Center: Bldg 4207	101 sq. ft.
(f)	NISN WAN Laboratory: Bldg 4207/Annex	950 sq. ft.
(g)	ViTS Lab: Bradford Drive/208	1550 sq. ft.
(h)	Stage and Test Lab: Bradford Drive/140	930 sq. ft.
(i)	NISN Mini Gateway: Bldg 4663	410 sq. ft.
(j)	NTR PoP: Bldg. 4663/A109	350 sq. ft.

7. Earth Station Lease Agreements

a. NISN Shall

1. Manage the contractual agreements for the satellite Earth Stations.

2. Coordinate with the Center when negotiating Earth Station lease agreements to ensure Center interests and issues are addressed.

3. Provide information required for Center to obtain frequency clearances.

b. Center shall:

1. Provide real property and facilities support to NISN as required.

2. Obtain necessary approval for NISN to operate in specified frequencies.

8. Mission Essential Infrastructure Critical Infrastructure Interdependencies for NASA Assets

Based on criteria found in NPR 1600.1, Appendix H, there are two types of assets that should be considered for MEI "protection". One asset is the facilities and services themselves that are required for NASA to function (deemed MEI to NASA). The second asset to be considered is critical infrastructure or interdependencies that MEI classified systems or services rely upon to be fully functional. These assets do not necessarily have to be classified as MEI but they do

require the same protection scheme. (This information is contained in NPR 1600.1 Appendix H in section 4). The NISN Gateway falls under the category of an MEI interdependency. Since each center houses one of the NISN gateways in its facilities, those assets need to be considered and included in the center Continuity of Operations and Disaster recovery plans.

a. NISN shall:

1.   Identify NISN assets for inclusion in Center plans.

2.   Provide specifications necessary for Center to allocate facility, power, and HVAC required to support the assets.

b. Center shall:

1.   Include provisions in the Center Disaster Recovery and Continuity of Operations Plans allocating space for three NISN Rack/cabinets that would be immediately available in the event of a disaster.

2.   Provide available recovery space immediately after a disaster and insure availability of recovery space for as long as needed.

3.   Provide power adequate to support NISN assets.

4.   Provide a Center point of contact for disaster recovery activities.

5.   Ensure NISN personnel will be provided access to the center/facility immediately following a disaster.

9.   Support Services and Resources

a. NISN shall:

1.   Provide CSR(s) and Gateway Techs with MSFC ODIN personal laptop computers

b. Center shall:

1.   Provide administrative communications such as: Local Area Network (LAN), telephones, facsimile, to support daily operations at Center.

2.   Provide security, emergency medical care, and fire protection on the same level and scale as provided to other government facilities and personnel.

3.   Provide continuous access to the enumerated facilities by NISN personnel.

4.   Provide vehicle parking space co-located with the facilities occupied and/or used by NISN personnel.

5.   Provide routine janitorial service and maintenance of the building, grounds, and facilities for NISN use.

6.   Provide emergency back up power (i.e., generator, UPS).

7.   Provide access to local safety, work order, and work processing systems required to accomplish daily business.

8. Provide access to site administrative services such as; color printers, print shop, photographic support, copiers, and supplies.

9. Provide shipping, receiving, and transportation services as required for accomplishing daily business.

10. Provide furniture (i.e., chairs, desk, credenzas, etc.) as available at each Center. Note: Office supplies are allowable items that UNITeS can submit on their 533.

11. Provide access to site health care services at each Center

12. Provide a safe and clean work environment.

13. Provide host center support in the areas of real property, facilities, and services (i.e. utilities, shipping, receiving, medical services, supplies, and transportation, and security) as required to facilitate the implementation and operations of the NISN provided services.

14. Provide Public Switched Telephone Network (PSTN) modem lines at each location to support the Enterprise Management Center.

15. Install spare CLNE at the direction of AT&T to minimize delays with callout and dispatch of maintenance personnel once a trouble is identified and isolated.

10. Commercial Telecommunications Carrier Demarcations

NISN contracts with and relies upon commercial telecommunications carriers for information transport services.

a. NISN shall:

1. Initiate and coordinate negotiation between the Center and the common carrier for the installation of new cabling or equipment by a carrier at the Center facility.

2. Initiate and coordinate discussions between the Center and the common carrier for negotiation of right-of-ways.

3. Coordinate with and obtain approval from the appropriate Host Center personnel for each requirement to extend NISN provided services from the NISN or commercial demark to users, activities, and/or offices at the Center.

b. Center shall:

1. Allow commercial telecommunications carriers to provide services to NISN occupied real property and facilities, or to such other demarcation points as may be agreed upon, and to install such cabling and equipment as may be necessary to provide NISN with the services contracted for in order to meet host organization WAN service requirements.

2. Identify the Center point of contact for the local carrier to notify when installing NISN services on the Center

3. Execute appropriate lease agreements with the commercial telecommunications carriers for their use of any government facilities.

4. Provide access and connectivity to the Center communications, cabling, and wiring systems as required for the purpose of extending NISN provided services to users, activities, and/or offices at the Center.

11.   Requirements Planning, Implementation and Operation

a. NISN shall:

1. Provide a process for submission of requirements for services to each center. This process for requesting services is fully described in the NSD which is available at http://nisn.nasa.gov under the section on submitting NISN Service Requests (NSR).

2. Initiate annual requirements reviews of all NISN requirements.

3. Provide information as requested to assist the Center in processing changes through their CCB. In the event of conflict between NISN and Center policies NISN will work diligently with the Center to resolve issues.

4. Attend local meetings, whenever possible, on a standing or invitation basis to help facilitate information flow between NISN and NISN customers.

5. Provide the center/projects annual funding methodology and updates.

6. Advise the center/projects of any new NISN Service offerings

b. Center shall:

1. Submit requirements for services using the established NISN procedures to include necessary security plan, funding strategy, and reasonable delivery timeline.

2. Ensure compliance with NPR 2810 and NITR 2810-2 guidelines for connection approvals and acceptable use of Agency Information Technology (IT) resources. *NISN is creating a mission support security checklist to assist with this.*

    (a) A NISN connection only exchanges data between end user locations/systems

    (b) The sensitivity of unencrypted data exchanged between user locations via the NISN connection is Sensitive-But-Unclassified

    (c) Secure information being passed on the NISN connection must be protected through the use of FIPS 140-2 approved encryption mechanisms and is the responsibility of the end user organization and sponsoring NASA Center.

    (d) All end users/organizations utilizing a NISN connection are expected to comply with the Privacy Act and Trade Secrets Act (18 U.S. Code 1905) and the Unauthorized Access Act (18 U.S. Code 2701 and 2710).

    (e) Upon discovering a security incident involving the NISN connection, the end user/Center representative will report the incident to the NASA Information Support Center (NISC) at 256-544-1771.

      (f)   The end user/sponsoring NASA Center is responsible for auditing application processes and user activities involving the interconnection

          (1)   Activities that will be recorded include event type, date and time of event, user identification, workstation identification, success or failure of access attempts, and security actions taken by system administrators or security officers

      (g)   The end user project/program/sponsoring NASA Center are responsible for ensuring the compliance with all Agency IT security policies/guidelines of remote connections to off-site facilities/systems both domestically and internationally.

3.   Conduct annual and ad hoc review of all Center NISN requirements.

4.   Work through the local Center personnel and Customer Service Representative for as much support as possible and diligently inform the Customer Service Representative of upcoming projects, meetings, requirements, etc.

5.   Provide support, access, and information for site surveys as necessary for NISN to develop design, costs, and schedules for requirements.

12.   ViTS/VoTS Facility Modifications When Required

ViTS/VoTS requirements often require a need for local facilities work to satisfy customer needs. This work requires extensive coordination and cooperation between NISN Center Representatives, NISN CSRs, Local Facilities personnel, and local contractors.

a. NISN shall:

1.   Provide local facilities personnel with drawings, specifications, and technical assistance.

2.   Conduct site surveys to identify facilities requirements

3.   Coordinate and communicate facilities requirements as early as possible so as to reduce impact to service delivery schedules.

4.   Provide the necessary cabling and/or hardware and instructions, for any required asbestos work, however, NISN provides no asbestos expertise. NISN will not work in any area where asbestos hazards have not been abated.

5.   Provide heating and cooling specific BTU's requirements for each project requiring local HVAC

6.   Provide specific structural specifications for wall stiffing and ceiling mounted devices

7.   Fabricate/cut openings in tables for installation of electronic interface boxes and drill holes in tables for cable installations

b. Center shall

1. Coordinate with designated NISN Customer Service Representative (CSR) and/or assigned engineer assigned to a specific task during all installations.

2. When possible and economically feasible provide cable access pathways and AC power as specified in drawings provided by NISN.

3. When ample facility resources are available, install all AC power that feeds NISN equipment on the same electrical phase and grounded.

4. Provide surge suppression, filtering, and UPS when available depending on facility. Notify NISN if the power requirements cannot be met.

5. Provide standard office space/conference room independently controlled heating and air conditioning. If additional HVAC capacity is required then funding may be required to provide this capability.

6. Maintain appropriate level of (HVAC) sound dampening to facilitate meetings and conferences. The acoustical levels must not exceed 52db of ambient noise during room operations. If additional HVAC sound dampening is required then funding may be required to provide this capability depending on each situation.

7. Provide core drills and conduit when required for extending cabling under floors or within walls. If core drills are required funding and coordination with customer may be required to provide this capability.

8. Mount NISN equipment per NISN specifications including video monitors, and provide reinforcement when necessary. It is a NISN responsibility to provide center with instructions on mounting to different types of structures.

9. Provide installation and relocation of NISN provided ceiling mounting brackets for cameras, video monitors, and projectors at locations provided by NISN. NISN is responsible to provide equipment-mounting specifications and to provide center with instructions on mounting to different types of structures as required.

10. Fabricate and/or relocate camera boxes (installed within walls) as per specifications provided by NISN. If fabrication is required funding and coordination with customer may be required to provide this capability.

11. Cut floor tiles when floor boxes and electrical connections are required on the floor. If fabrication and labor are required funding and coordination with customer may be required to provide this capability.

13. Mission Services Implementation

In most cases, Mission Services require a higher level of attention to support real and near real time operations. They often utilize site personnel to perform or assist with installations. Centers must take this requirement into account when supporting Mission Services. Additionally, many Mission requirements are time sensitive and require prompt responses from site personnel in order to meet established customer installation dates.

a. NISN shall:

1. Ensure that appropriate NISN Mission Service is coordinated with the designated Center Representative and approved by the appropriate Mission/Payload Representative for the Huntsville Operations Support Center/Payload Operations Center.

2. Coordinate with center/project the end-to-end engineering associated with new implementations, modifications and upgrades to existing services.

3. Provide the center/project with status of requirement or implementation of the service.

b. Center Shall:

1. Ensure that each NISN Mission Service is coordinated with and approved by the appropriate Mission/Payload Representative for the Huntsville Operations Support Center/Payload Operations Center.

c. Center Mission Representative shall:

1. Ensure that each NISN Mission Service is coordinated with the designated NISN Center Representative.

14.   Mission Routed Data Connection Security Checklist

All connections to NISN IONET require completing a security checklist before the connection is made. To prevent delaying implementation of service, the customer will begin work on this checklist at the time of requirement submittal. Refer to NPR 2810, Chapter 5, NITR 2810-2 and the IONET Access Policy (provide location for document) for more information.

15.   Mission Services Operations Support

Mission Operations typically have higher restoral and problem identification/resolution service levels (2hours and < 1 minute) which often require 24 x 7 on-site support to successfully meet restoral times. Since NISN personnel do not reside in Mission Customer Facilities, the NISN equipment is managed by NISN remotely and NISN is not staffed onsite to provide this support. Therefore, NISN must rely on Host Center Communications personnel to provide this on-site support for NISN circuit and equipment troubleshooting (to include use of test sets), resets, vendor escort, etc.

The Michoud Assembly Facility (MAF) is provided mission circuits and equipment by the MSFC HOSC for support of Shuttle ET operations from the MAF Mission Support Room (MSR). MAF mission circuits are coordinated and maintained through utilization of existing MOA policies and procedures.

a. NISN shall:

1. Provide a list of equipment and circuits subject to site support.

2. Provide a list of NISN standing maintenance windows.

3. Provide NISN Freeze policies.

4. Provide intercenter operational communication circuits and services with an established interface.

5. Assure/coordinate end-to-end circuit engineering.

6. Provide end-to-end operational technical control.

7. Identify and coordinate implementation of all new requirements with user/requester.

8. Identify to MSFC any new communication circuits and/or services requirements.

9. Schedule all NISN services for major test and when special manning is required.

10. AT&T, under GSFC request, will authorize NSI to troubleshoot and/or reconfigure NTR equipment. Before authorizing AT&T/NSI to dispatch to MSFC, GSFC will notify MSFC for approval of these personnel to perform work in the Huntsville Operations Support Center/Payload Operations Center. Personnel responding must obtain the proper clearance thru NASA/ MSFC.

11. Troubleshooting of the leased circuits and NTR equipment may require turning control of the equipment over to AT&T to ensure test signals or loop back do not interfere with MSFC operations. It is GSFC's responsibility to notify MSFC of such outages, reroute circuits or services, or terminate circuits/services in the NISN network. If the above action is not possible; GSFC should notify MSFC to protect its system by disconnecting circuits and/or services.

b. Center shall:

1. Provide experienced and knowledgeable communications personnel to support troubleshooting efforts.

2. Provide the capability to support around the clock operations.

3. Have appropriate test equipment available for troubleshooting NISN Mission circuits and equipment.

4. Provide lists of on call personnel.

5. Provide standing Center maintenance windows.

6. Provide Center specific freeze policies.

7. Provide limited operations and maintenance of NISN-leased AT&T equipment installed in the MSFC.

8. Coordinate with NISN and local communications organizations for implementation of all new circuit installations, activations, and testing.

9. Provide technical support personnel during scheduled tests and when special manning is required.

Appendix A. NISN Standing Maintenance Windows

NISN has established a routine Preventative Maintenance (PM) window in order to perform actions necessary to maintain the health of the Mission Communications Network Infrastructure and Services. During these windows, there may be minor impacts to NISN Mission Services. Preventative Maintenance will not be performed during NISN Freezes and Critical Coverage Periods. NISN Network Scheduling Group (NNSG) Activity Notices will be sent to customers as a reminder of the activity and its potential impact to services five days in advance of the routine PM window. To be included in the NNSG Activity Notices, please e-mail 'nnsg@ncc-comm.gsfc.nasa.gov' and include information about what project you support and which NISN services you utilize.

Preventative Maintenance Windows for NISN Mission Routed Data Services are scheduled every Tuesday from 1800Z to 1830Z. During these standing PM windows, customers on IONET can expect to see one or more minor hits lasting a few seconds. There is no impact expected for TCP/IP data flows, and there will be no loss of connectivity. Multicast/UDP data flows may drop blocks during those few seconds. Customers who may be sensitive to the impact as described above are encouraged to take this preventative maintenance window into account when scheduling their supports.

During the PM Window, activities may be scheduled which have a larger impact to a limited number of customers. These activities will be scheduled separately through the standard NISN Network Scheduling Group (NNSG) briefing process and coordinated with the impacted customers.

Appendix B. Center Standing Maintenance Windows